

Patent Application No. 10/056,546

REMARKS

This Amendment is in response to the Office Action dated July 8, 2005. In the Office Action, claims 5 and 20 were objected to and claims 1-28 were rejected under 35 USC §103. By this Amendment, claims 5 and 20 are amended. Currently pending claims 1-28 are believed allowable, with claims 1, 16 and 22 being independent claims.

CLAIM OBJECTIONS

Claims 5 and 20 were objected to under 37 CFR 1.75(c) as being improper dependent form for failing to further limit the subject matter of a previous claim. Claims 5 and 20 amended to overcome this objection.

Independent claim 1 recites, in part, "examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result." Claim 5 further limits claim 1 by introducing an "optimization criterion" for active selection. The optimization criteria element of claim 5 is selected from the group consisting of: information measures and confidence. The Applicant respectfully submits that the elements and limitations of claim 5 do not appear in claim 1.

Independent claim 16 also recites, in part, "examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result." Nevertheless, claim 16 does not speak to an optimization criterion for active selection that includes one or more criteria selected from the group consisting of: information measures and confidence. Thus, the Applicant respectfully submits that the elements and limitations of claim 20 do not appear in claim 16.

CLAIM REJECTIONS UNDER 35 USC §103

Claims 1-28 were rejected under 35 USC §103 as obvious over U.S. Patent No. 6,804,684 issued to Stubler et al. (hereinafter "Stubler") in view of U.S. Patent No. 6,816,847 to Toyama (hereinafter "Toyama"). Office Action, page 2, paragraph 4. A *prima facie* case for obviousness

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can only be made if the combined reference documents teach or suggest all the claim limitations. MPEP 2143. Furthermore, to establish a *prima facie* case of obviousness, there must be some suggestion or motivation to modify the reference or to combine reference teachings. MPEP 2143..

Before addressing the subject matter of the claims, a general discussion of the present invention, Stubler and Toyama may assist review of the pending application.

The present invention relates to efficient interactive annotation or labeling of multimedia content to facilitate effective searching, filtering and usage of content. App., pg. 1, ln. 4-6. In one embodiment of the invention, efficiency is realized by prompting a user to annotate only a small set of selected example content, with the results propagated to the annotation of a maximum number of other multimedia content. App., pg. 4, ln. 11-14, pg. 7, ln. 2-4. This causes the user to annotate as few examples as possible. App., pg. 5, ln. 7-8.

Stubler appears to relate to a method for associating captions with images in an image database environment. Stubler, col. 1, ln. 7-10. Briefly, the captioning technique of Stubler involves acquiring an image for evaluation with respect to stored images, automatically extracting metadata from the acquired image, automatically selecting one or more stored images having metadata similar to the extracted metadata, and generating one or more captions for the acquired image from preexisting captions associated with the selected stored images. Stubler, col. 3, ln. 15-32. Although Stubler discusses an optional feature for user verification of extended captioning or semantic labeling, there is no teaching of actively selecting examples of multimedia content to achieve the annotation of a maximum number of other multimedia content. Stubler, col. 8, ln. 40-55.

Toyama appears to relate to computerized aesthetic judgment of images. Toyama, col. 1, ln. 47-48. According to one embodiment of Toyama, a classifier is trained based on a set of training images, along with aesthetic scores assigned to the training images. Toyama, col. 5, ln. 15-19. The training images can be scored by professionals

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and/or laypeople. Toyama, col. 5, ln. 32-38. Once trained, the classifier can be used to provide aesthetic scores to input images, as well as provide recommendations to improve the aesthetic scores of the input images. Toyama, col. 1, ln. 65 - col. 2, ln. 4.

Claim 1

Claim 1 recites, in part, "actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result." In rejecting claim 1, the Office Action argues that although Stubler does not teach actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result, this teaching is found in Toyama. The Office Action cites column 5, lines 15-16 of Toyama in support of its position.

As mentioned above, Toyama discloses a classifier that provides aesthetic scores to input images. The classifier is first trained with a set of training images. The citation offered by the Office Action makes no mention of selecting training images based on at least one criterion for achieving a maximal disambiguation result. Toyama states, "the images may include a set of web pages, a set of scanned-in pictures, a set of created pictures, a set of drawings, a set of page layouts, etc." Toyama, col. 5, ln. 21-23. Toyama also adds, "The set of images in the training set desirably includes a wide variety of images, both those considered aesthetically pleasing, and those considered aesthetically poor." Toyama, col. 5, ln. 30-32. The Applicant respectfully submits that Toyama does not provide any instruction for selecting images based on at least one criterion for achieving a maximal disambiguation result, as recited in claim 1 of the present invention.

The Office Action argues, "It would have been obvious and desirable to have used the active selection techniques disclosed by Toyama in col. 5 lines 15-16 to have improved the active selection techniques disclosed by Toyama." The Applicant respectfully submits that Toyama makes no mention of an active selection technique.

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Specifically, Stubler teaches generating captions or labels for acquired images from preexisting captions or labels associated with stored images. There is no mention in Stubler of an active selection technique.

The Office Action alleges that the field of endeavor is very similar for Stubler and Toyama since Toyama "is directed towards propagating annotations from a known training set to similar images that have do not have [sic] any associated annotations." The Applicant respectfully submits that Toyama does not mention or suggest propagating annotations from a known training set to similar images that do not have any associated annotations. The citation offer by the Examiner (col. 1, line 47 to col. 2, line 14 of Toyama) supporting the Office Action's assertion is devoid of teaching relating to annotations.

Furthermore, the Office Action fails to cite any suggestion or motivation in the prior art to modify the Stubler with the teachings of Toyama. Toyama discusses techniques for training a classifier to provide aesthetic scores for input images. Stubler does not demonstrate any appreciation of training techniques such as discussed in Toyama. Thus, the Applicant respectfully submits that no motivation or suggestion exists in the cited art to modify the Stubler with the teachings of Toyama.

For at least the reasons discussed above, the Applicant respectfully asserts that the Office Action has not established a *prima facie* case of obviousness for claim 1. As such, the rejection of claim 1 should be withdrawn. Moreover, the Applicant believes that claim 1 is patentable over the cited documents and earnestly requests an indication of allowability for claim 1:

Claims 2-15

Claims 2-15 are dependent on and further limit claim 1. Since claim 1 is believed allowable, claims 2-15 are also believed allowable for at least the same reasons as claim 1.

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Claim 23

Claim 23 recites, "The method of claim 1, wherein the at least one criterion includes an ambiguity level of the selected examples." In rejecting claim 23, the Office Action argues that although Stubler does not teach wherein at least one criterion include an ambiguity level of selected examples, such a teaching is found at column 5, line 15 to column 6, line 50 of Toyama. The Applicant respectfully disagrees with the Examiner's interpretation of Toyama.

Within the long citation offered by the Examiner, Applicant can find only two sentences that deal with selecting examples. The first sentence states, "for example, the images may include a set of web pages, a set of scanned-in pictures, a set of created pictures, a set of drawings, a set of page layouts, etc." The second sentence states, "The set of images in the training set desirably includes a wide variety of images, both those considered aesthetically pleasing, and those considered aesthetically poor." Neither sentence mentions or suggests wherein the at least one criterion includes an ambiguity level of the selected examples.

For at least this reason, and the reasons given for claim 1, claim 23 is believed allowable. The Applicant therefore earnestly requests an indication of allowability for claim 23.

Claim 24

Claim 24 recites, "The method of claim 1, wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space." In rejecting claim 24, the Office Action argues that although Stubler does not teach wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space, such a teaching is found at column 5, line 15 to column 6, line 50 of Toyama. The Applicant respectfully disagrees with the Examiner's interpretation of Toyama.

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For at least this reason, and the reasons given for claim 1, claim 24 is believed allowable. The Applicant therefore earnestly requests an indication of allowability for claim 24.

Claim 16

Claim 16 recites, in part, "means for actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result." In rejecting claim 16, the Office Action argues that although Stubler does not teach actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result, this teaching is found in Toyama. The Office Action cites column 5, lines 15-46 of Toyama in support of its position.

As mentioned above, Toyama discloses a classifier that provides aesthetic scores to input images. The classifier is first trained with a set of training images. The citation offered by the Office Action makes no mention of selecting training images based on at least one criterion for achieving a maximal disambiguation result. Toyama states, "the images may include a set of web pages, a set of scanned-in pictures, a set of created pictures, a set of drawings, a set of page layouts, etc." Toyama, col. 5, ln. 21-23. Toyama also adds, "The set

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of images in the training set desirably includes a wide variety of images, both those considered aesthetically pleasing, and those considered aesthetically poor." Toyama, col. 5, ln. 30-32. The Applicant respectfully submits that Toyama does not provide any instruction for selecting images based on at least one criterion for achieving a maximal disambiguation result, as recited in claim 16 of the present invention.

The Office Action argues, "It would have been obvious and desirable to have used the active selection techniques disclosed by Toyama in col. 5 lines 15-46 to have improved the active selection techniques disclosed by Toyama." The Applicant respectfully submits that Toyama makes no mention of an active selection technique. Specifically, Stubler teaches generating captions or labels for acquired images from preexisting captions or labels associated with stored images. There is no mention in Stubler of an active selection technique.

The Office Action alleges that the field of endeavor is very similar for Stubler and Toyama since Toyama "is directed towards propagating annotations from a known training set to similar images that have do not have [sic] any associated annotations." The Applicant respectfully submits that Toyama does not mention or suggest propagating annotations from a known training set to similar images that do not have any associated annotations. The citation offer by the Examiner (col. 1, line 47 to col. 2, line 14 of Toyama) supporting the Office Action's assertion is devoid of teaching relating to annotations.

Furthermore, the Office Action fails to cite any suggestion or motivation in the prior art to modify the Stubler with the teachings of Toyama. Toyama discusses techniques for training a classifier to provide aesthetic scores for input images. Stubler does not demonstrate any appreciation of training techniques such as discussed in Toyama. Thus, the Applicant respectfully submits that no motivation or suggestion exists in the cited art to modify the Stubler with the teachings of Toyama.

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For at least the reasons discussed above, the Applicant respectfully asserts that the Office Action has not established a *prima facie* case of obviousness for claim 16. As such, the rejection of claim 16 should be withdrawn. Moreover, the Applicant believes that claim 16 is patentable over the cited documents and earnestly requests an indication of allowability for claim 16.

Claims 17-21

Claims 17-21 are dependent on and further limit claim 16. Since claim 16 is believed allowable, claims 17-21 are also believed allowable for at least the same reasons as claim 16.

Claim 25

Claim 25 recites, "The system of claim 16, wherein the at least one criterion includes an ambiguity level of the selected examples." In rejecting claim 25, the Office Action argues that although Stubler does not teach wherein at least one criterion include an ambiguity level of selected examples, such a teaching is found at column 5, line 15 to column 6, line 50 of Toyama. The Applicant respectfully disagrees with the Examiner's interpretation of Toyama.

Within the long citation offered by the Examiner, Applicant can find only two sentences that deal with selecting examples. The first sentence states, "For example, the images may include a set of web pages, a set of scanned-in pictures, a set of created pictures, a set of drawings, a set of page layouts, etc." The second sentence states, "The set of images in the training set desirably includes a wide variety of images, both those considered aesthetically pleasing, and those considered aesthetically poor." Neither sentence mentions or suggests wherein the at least one criterion includes an ambiguity level of the selected examples.

For at least this reason, and the reasons given for claim 16, claim 25 is believed allowable. The Applicant therefore earnestly requests an indication of allowability for claim 25.

Claim 26

Claim 26 recites, "The system of claim 16, wherein the at least one criterion includes a confidence level of the selected examples, the

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confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space." In rejecting claim 26, the Office Action argues that although Stubler does not teach wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space, such a teaching is found at column 5, line 15 to column 6, line 50 of Toyama. The Applicant respectfully disagrees with the Examiner's interpretation of Toyama.

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For at least this reason, and the reasons given for claim 16, claim 26 is believed allowable. The Applicant therefore earnestly requests an indication of allowability for claim 26.

Claim 22

Claim 22 recites, in part, "selecting of examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one criterion for achieving a maximal disambiguation result." In rejecting claim 22, the Office Action argues that although Stubler does not teach actively selecting examples of multimedia content to be annotated by a user, wherein the examples of multimedia content are selected based on at least one

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criterion for achieving a maximal disambiguation result, this teaching is found in Toyama. The Office Action cites column 5, lines 15-46 of Toyama in support of its position.

As mentioned above, Toyama discloses a classifier that provides aesthetic scores to input images. The classifier is first trained with a set of training images. The citation offered by the Office Action makes no mention of selecting training images based on at least one criterion for achieving a maximal disambiguation result. Toyama states, "the images may include a set of web pages, a set of scanned-in pictures, a set of created pictures, a set of drawings, a set of page layouts, etc." Toyama, col. 5, ln. 21-23. Toyama also adds, "The set of images in the training set desirably includes a wide variety of images, both those considered aesthetically pleasing, and those considered aesthetically poor." Toyama, col. 5, ln. 30-32. The Applicant respectfully submits that Toyama does not provide any instruction for selecting images based on at least one criterion for achieving a maximal disambiguation result, as recited in claim 16 of the present invention.

The Office Action argues, "It would have been obvious and desirable to have used the active selection techniques disclosed by Toyama in col. 5 lines 15-46 to have improved the active selection techniques disclosed by Toyama." The Applicant respectfully submits that Toyama makes no mention of an active selection technique. Specifically, Stubler teaches generating captions or labels for acquired images from preexisting captions or labels associated with stored images. There is no mention in Stubler of an active selection technique.

The Office Action alleges that the field of endeavor is very similar for Stubler and Toyama since Toyama "is directed towards propagating annotations from a known training set to similar images that have do not have [sic] any associated annotations." The Applicant respectfully submits that Toyama does not mention or suggest propagating annotations from a known training set to similar images that do not have any associated annotations. The citation offer by the Examiner (col. 1, line 47 to col. 2, line 14 of Toyama) supporting the

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For at least the reasons discussed above, the Applicant respectfully asserts that the Office Action has not established a *prima facie* case of obviousness for claim 22. As such, the rejection of claim 22 should be withdrawn. Moreover, the Applicant believes that claim 22 is patentable over the cited documents and earnestly requests an indication of allowability for claim 22.

Claim 27

Claim 27 recites, "The computer program product of claim 22, wherein the at least one criterion includes an ambiguity level of the selected examples." In rejecting claim 27, the Office Action argues that although Stubler does not teach wherein at least one criterion include an ambiguity level of selected examples, such a teaching is found at column 5, line 15 to column 6, line 50 of Toyama. The Applicant respectfully disagrees with the Examiner's interpretation of Toyama.

Within the long citation offered by the Examiner, Applicant can find only two sentences that deal with selecting examples. The first sentence states, "For example, the images may include a set of web pages, a set of scanned-in pictures, a set of created pictures, a set of drawings, a set of page layouts, etc." The second sentence states, "The set of images in the training set desirably includes a wide variety of images, both those considered aesthetically pleasing, and those considered aesthetically poor." Neither sentence mentions or suggests wherein the at least one criterion includes an ambiguity level of the selected examples.

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For at least this reason, and the reasons given for claim 22, claim 27 is believed allowable. The Applicant therefore earnestly requests an indication of allowability for claim 27.

Claim 28

Claim 28 recites, "The computer program product of claim 22, wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space." In rejecting claim 28, the Office Action argues that although Stubler does not teach wherein the at least one criterion includes a confidence level of the selected examples, the confidence level being inversely proportional to a distance of a new feature of the selected examples from a separating hyperplane in an induced higher dimensional feature space, such a teaching is found at column 5, line 15 to column 6, line 50 of Toyama. The Applicant respectfully disagrees with the Examiner's interpretation of Toyama.

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For at least this reason, and the reasons given for claim 22, claim 28 is believed allowable. The Applicant therefore earnestly requests an indication of allowability for claim 28.

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CONCLUSION

In view of the forgoing remarks, it is respectfully submitted that this case is now in condition for allowance and such action is respectfully requested. If any points remain at issue that the Examiner feels could best be resolved by a telephone interview, the Examiner is urged to contact the attorney below.

No fee is believed due with this Amendment, however, should a fee be required please charge Deposit Account 50-0510. Should any extensions of time be required, please consider this a petition thereof and charge Deposit Account 50-0510 the required fee.

Respectfully submitted,

Dated: December 7, 2005


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